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RESEARCH REPORT

FIELD TRAINING EXERCISE FIREX 88

A STUDY IN LARGE SCALE UNIT TRAINING

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Army National Guard

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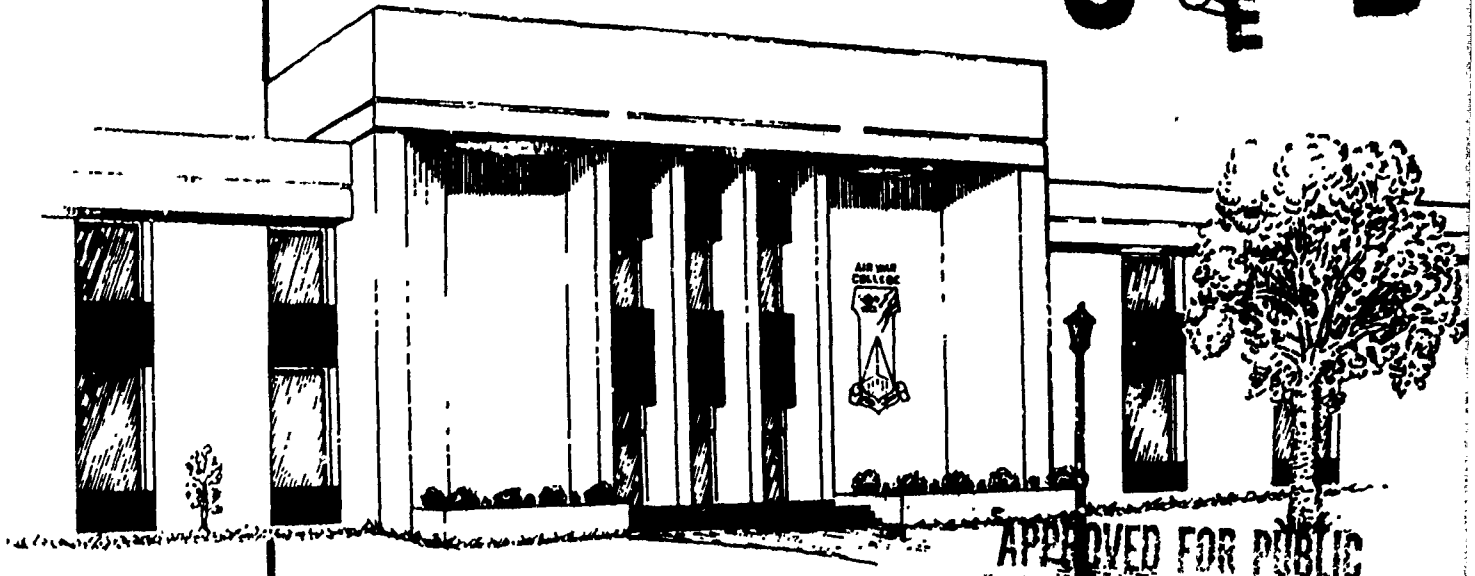

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Field Training Exercise FIREX 88
A Study in Large Scale Unit Training

by

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A DEFENSE ANALYTICAL STUDY SUBMITTED TO THE FACULTY

IN

FULFILLMENT OF THE CURRICULUM

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EXECUTIVE SUMMARY

TITLE: Field Training Exercise FIREX 88 - A study in large scale unit training.

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A study of the plans and preparations required to conduct a large scale, live fire, field training exercise involving both active and reserve component units. A description of how the exercised was planned including the functions of a planning cell, the preparation of an environmental assessment, and the staff coordination required to train 12,000 soldiers and airmen in the desert. The complexities of preparing a large scale exercise are discussed and the planning lessons learned from the exercise are presented. An annex of critical exercise planning questions is presented to assist future exercise planners.

Keywords: military installations, logistics (procedures), medical support. (ICR)

BIOGRAPHICAL SKETCH

Lieutenant Colonel Stanley J. Gordon (M.B.A., University of Utah) has been involved in unit training since 1967. He has commanded two Field Artillery Batteries in Europe and a 155mm Battalion of the Utah Army National Guard. From March 1986 to July 1988 he was the Project officer responsible for the daily planning of FIREX. During this period he was actively involved in the issues discussed in this study and had daily interface with exercise planners at all levels. Lieutenant Colonel Gordon is a graduate of the Air War College, class of 1989.

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CHAPTER I

INTRODUCTION

A modern military force must be trained for combat.(25:152) Training is conducted to prepare soldiers, leaders, and units to fight and win in combat — the Army's basic mission.(1:1) In order for military units to properly train, there must be a training plan, an opportunity to execute the training plan, and a means of reviewing the results of the training. This process is known as the training management cycle. (1:11)

This study focuses on one portion of the training management cycle — the planning required to conduct a large scale field training exercise (FTX). Using I Corps Artillery's FTX FIREX 88 as an example, the study details the planning actions required to prepare the training environment and the lessons learned from this large scale exercise. The study does not focus on the tactics trained; however, it does focus on the development of an environment which allows the chain of command to conduct realistic, mission essential, training without excessive distractions.(1:9)

The preparation of the training environment is very complex and requires coordination and cooperation among participants. Without a positive environment, unit training can quickly become stalled in distracting administrative trivia.(25:153)

As the project officer for I Corps Artillery's exercise planning cell, the author conducted initial research for this study from March 1986 to July 1988 while the exercise was being planned and executed.

Information was also taken from numerous after action reports prepared by the participating commands.

An exercise planning question list is included at Annex A which can be used to develop a positive training environment with minimum training distractions.

Background information about FTX FIREX: I Corps Artillery, Utah Army National Guard (UTARNG), is a major subordinate command of I Corps, an active component (AC) unit located at Fort Lewis, WA. I Corps Artillery has participated in numerous Corps level exercises including command post exercises (CPX) and FTX Team Spirit which is held yearly in Korea. I Corps Artillery commands the non-divisional field artillery units assigned to I Corps and provides the fire support element (FSE) to the I Corps Tactical Operations Center (TOC). The field artillery units which compose I Corps Artillery include both AC and reserve component (RC) units from throughout the United States.

I Corps Artillery has conducted extensive CPX training for its units over the past few years. CPX training brings together the staff elements from selected units to conduct procedural training and provides, in a limited environment, face to face dialogue of common problems. The I Corps Artillery CPX program has done much to refine how I Corps Artillery will fight. The draw back to any CPX is that it never puts troops and equipment in a field environment to see if units can operate as their leaders believe.

In February 1986, planning began at the I Corps Artillery headquarters to break out of the CPX mold and conduct a large scale fire support FTX. Initial plans were to employ only a few units and test

tactical concepts during field training. From this simple beginning, a plan was developed that would deploy more than 12,000 troops, 2500 vehicles, and numerous units to the desert of western Utah for a live fire exercise. The exercise was named FIREX.

FIREX was to be as realistic as possible and would concentrate on warfighting skills and command relationships within I Corps. The I Corps Artillery commander and exercise director, Brigadier General James Miller, envisioned that I Corps units would deploy to Utah and conduct training. Participants would not only include elements of I Corps Artillery but units from the 311th Corps Support Command (COSCOM), the 142nd Sig Brigade, 49th Military Police Brigade, the 66th Aviation Brigade, the United States Air Force, and the I Corps Staff. The concept was briefed to the I Corps Commander who concurred and agreed to participate in the exercise. FIREX major participants were:

Major Non-Field Artillery Commands

Unit	Component	Location
I Corps Tactical Command Post	AC	Ft. Lewis, WA
United States Property and Fiscal Office - UTARNG	UTARNG	Salt Lake City, UT
311th Corps Support Command	USAR	Los Angeles, CA
174th Support Group	USAR	Seattle, WA
162nd Support Group	USAR	Salt Lake City, UT
111th Ordnance Group	ALARNG	Opelika, AL
142nd Signal Brigade	ALARNG	Decatur, AL
49th Military Police Brigade	CAARNG	Alameda, CA
66th Aviation Brigade	WAARNG	Tacoma, WA
115th Engineer Group	UTARNG	Murray, UT
163rd Armored Cavalry Regiment	MTARNG	Helena, MT
110th Air Support Operations Center (USAF)	MIANG	Battle Creek, MI

The exercise director's conceptual guidance was simple. (2:1)

— Deploy units into a bare based environment in the deserts of Utah. The use of garrison military facilities was discouraged. The emphasis was on deploying from home station directly to the field, conduct the training, and returning. The exercise area was to be extensive, 90 by 50 miles, using three military installations and Department of Interior lands in the exercise area.

— Training was to be live fire. Field Artillery, Army Aviation, and Tactical Air Force aircraft would all fire into the same impact areas.

— Have the exercise controlled by the chain of command. FIREX would allow units to train as they would fight. The chain of command would be responsible for the preparation of exercise tactical plans and the training of their units.

With this guidance, FIREX was an example of how to train. It met the Principles of Training detailed in Army Field Manual FM 25-100 which are: (1:4-6)

— Combined Arms and Service Team Training

— Train as you fight

— Use Appropriate Doctrine

— Use Performance-Oriented Training

— Train to Challenge

— Train to Sustain Proficiency

— Train using multiechelon techniques

— Train to maintain

These principles were considered as the plans were developed. It was clear from the beginning that FIREX would have units of different size and ability from many army branches and components. Most units would be RC conducting annual training periods but some would be from the AC.

In order to plan the exercise, I Corps Artillery staffed an exercise planning cell to conduct the daily planning for the exercise. Chapter II discusses in detail the cells activities.

To build the training team, participating units were invited to numerous in progress review (IPR) sessions. The chain of command from each major headquarters was responsible for developing its technical and tactical plans based on the overall plan developed by I Corps Artillery. Briefings, personal discussions, letters, and memos coordinated the planning effort. The staff coordination between major commands developed, over time, into an excellent training relationship.

The exercise was conducted from 12 to 26 June 1988 when units deployed from home station, conducted tactical training, and returned home.(28:1) No one was killed or seriously injured. Twelve Field Artillery battalions fired over 10,000 rounds into widely dispersed impact areas, the Air Force provided 260 fighter bomber sorties and tactics were refined for the suppression o" enemy air defense (SEAD) and joint air attack teams (JAAT).

General Palastra, Commander in Chief, Forces Command (CICFORSCOM), in a personal message to General Vuono, Army Chief of Staff, commented about FIREX,

> " I'm sure all the commanders involved will agree that FIREX 88 was a success resulting in a tremendous boost to the combat readiness and warfighting capability of I Corps." (5:—)

The remainder of this study details the actions of the staffs to coordinate and bring together those elements required to conduct training on a large scale. The effort to plan for and support training is complex but, improved combat readiness results from a successful exercise.

CHAPTER II

THE EXERCISE PLANNING CELL

To manage on a day to day basis the overall direction of FIREX 88 a planning cell was formed within I Corps Artillery on 6 March 1986.(2:1) The cell was composed of Utah Guardsman who were placed on full time training duty (FTTD) tours. Funding for the tours was provided by the Army National Guard Bureau (NGB), using training money provided by the exercise branch of the NGB.(28:1)

The planning cell was composed of only four people:(28:S-I-1)

Lieutenant Colonel - Project Officer
Captain - Logistical Support Officer
Sergeant First Class - Intelligence
Sergeant - Communications and Administrative Support

Planning cell responsibilities were delineated in April, 19[illegible] The planning cell was to develop the exercise concepts, begin major unit coordination, and provide the focal point for coordination. The major objective of the planning cell was to provide an environment for the conduct of the exercise. The environment included: Coordinating for exercise real estate, providing exercise maps, providing exercise Communication and Electronic Operating Instructions (CEOI), conducting a Battle Book exercise in June 87, preparing the overall exercise directive, maintaining contact with the major commands of FIREX 88, and coordinating tactical Field Artillery planning with the I Corps Artillery staff. (2:1)

Exercise real estate: Real estate agreements required coordination with three military installations and the Bureau of Land

Management. The military installations were: Dugway Proving Ground, Tooele Army Depot and Camp W. G. Williams.

Dugway Proving Ground (DPG) — an Army Material Command (AMC) installation located 85 miles Southwest of Salt Lake City, UT with missions of research and development testing for the Army's Test and Evaluation Command (TECOM) and the training of all services in desert operations.(2:1) DPG's three live fire impact areas and nearly 2,000,000 acres of land could support the training of large combat service and combat service support units in a "near wartime" environment. Because FIREX would use DPG as the exercise main battle area, major logistical support, and communications area the planning cell began discussions with the DPG staff in July 1986 to seek support for the exercise. The DPG staff raised three concerns for the exercise: Safety of live firing, protection of the environment, and law and order for the Dugway Community. (2:2)

Tooele Army Depot (TAD) — an AMC installation located 45 miles Southwest of Salt Lake City, UT.(2:2) The depot is a storage location for ammunition, has two rail yards, and an area large enough for the logistical base required to support the exercise. TAD was used as the point of debarkation/embarkation for exercise units, the Corps' Logistical Support Base, and the headquarters area for the 311th COSCOM.(2:3)

Camp W. G. Williams - the traditional site of Utah National Guard Annual Training. Located 22 miles South of Salt Lake City, Camp Williams offered training facilities for 3000 troops.(2:2) During FIREX

Camp Williams would be used as the "Rear Battle" area, logistical, and communications base area. (2:3)

Bureau of Land Management (BLM) — Public lands were required for assembly areas, communications sites, and field artillery firing points.(2:3) Coordination was begun with the BLM in July 1986 concerning land use procedures and policies. The procedures and policies developed were detailed in an Environmental Assessment (EA) which was coordinated with the BLM, Bio/West (an independent contractor), the military installations, and the UTARNG Environmental Engineer. (2:3) More information concerning environmental requirements is discussed in Chapter IV.

Exercise maps: Exercise maps were ordered through the Defense Mapping Agency (DMA) using existing ordering procedures. The procedures worked for existing DMA sheets; however, problems were encountered when several map sheets, 1:50,000 scale, of the DPG area were not DMA sheets.(2:4) This required special coordination for printing and distribution including obtaining photo-engraving map masters from the United States Coast and Geodetic Survey. The map masters were 1:24,000 scale and required extensive conversion work which was done by the 30th Engineer (Topographical) Battalion of Ft. Belvore, VA prior to being printed in 1:50,000 scale. In order to insure map availability for participants, centralized control was maintained on all maps of the exercise area. FIREX units were automatically issued 1:50:000 scale maps on a ratio of 5 per battery/company sized unit. (2:4) Unit requests for additional maps were processed through the planning cell. A total of 2000 sheets, 1:50:000 scale maps, were ordered and used.

Exercise Communications and Electronics Operating Instructions (CEOI): A CEOI is used to assign radio frequencies to specific units for tactical and administrative radio nets. An unclassified exercise CEOI was produced by the National Security Agency (NSA) in accordance with the planning cell's specifications. The CEOI included tactical frequency modulation (FM), single sideband/radio teletype (SSB/RTT), ultra-high frequency (UHF) and very high frequency (VHF) nets for all exercise units. The planning cell polled units for their net requirements, obtained frequency allocations from the 6th Army frequency manager at the Presidio of San Francisco, and prepared the CEOI data base. Once the data base had been prepared it was taken to NSA for publication and then the finished CEOIs were returned to the planning cell for distribution.(2:4)

Problems surfaced in the preparation of the CEOI in two areas.(2:5) First, the participating units had difficulty in defining their doctrinal nets. The Field Artillery (FA) and Aviation units use radio as a primary means of communications and quickly responded to requests for needed nets, net members, and equipment frequency requirements. The logistical units, because they seldom use radios as a primary means of communications, were slow to articulate their needs. The planning cell finally used an existing corps level CEOI and built generic nets for the logistical units. Second, the large number of nets involved required extensive frequency coordination by the 6th Army frequency manager and long lead times were required to obtain frequencies which would not interfere with either the public or other governmental agencies.(2:5)

"Battle Book 87", an exercise reconnaissance: In June 1987 an exercise reconnaissance named, by the exercise director, "Battle Book 87" was conducted to familiarize unit leaders with the exercise area.(2:5) Patterned after the I Corps Korean "Battle Book" experience, Battle Book 87 took leaders through assembly areas, installations, and firing areas proposed for FIREX. Both Combat Service and Combat Service Support units participated in Battle Book 87, with units invited to send three representatives, the Commander, Operations officer (S-3), and Logistics officer (S-4).(2:5) Sites were selected for logistical facilities, firing positions, communications areas, and unit assembly areas. The three military installations DPG, TAD, and Camp Williams, as well as the BLM, participated in Battle Book 87 to insure that the needs of the exercise were discussed and staff actions begun. Battle Book 87 formed the basis for exercise land use proposals and ground placement of participants. (2:5)

Several problems were encountered during Battle Book 87. One problem was the lack of known Combat Service Support units. There were many logistical units subordinate to the 311th COSCOM which were not identified prior to Battle Book 87 because of two major reasons: (1) Logistical units were committed to other higher priority exercises; and (2) The requirement for a specific type unit had not been validated prior to Battle Book 87.(2:5) The lack of a complete troop listing forced the logistical staffs of the 311th COSCOM and their support groups to select logistical sites, make tentative plans, and organize their logistical installations without benefit of subordinate unit input. Another problem was that participants in Battle Book 87 were not

the same as those in the exercise. Although the Battle Book 87 letter of instruction (LOI) requested commanders, S-3's, and S-4's who would be participants a year later, many units could or would not stabilize their personnel in key positions. Plans were made and locations were selected by individuals who would not participate in FIREX which caused confusion at all levels.(2:6)

Contact with the major commands of FIREX: Because each command designated a project officer to manage their internal planning and operations, constant contact with the major FIREX commands was maintained by telephone, written documents, and personal visits by individuals and groups.(2:6) Areas of concern, which required coordination to resolve, ranged from operations, logistics, and communications, to administrative support. Funds for temporary duty (TDY) to coordinate exercise problems were made available from the UTARNG Director of Plans and Training (DPT) but shortages became a problem and there were times when unit visits were shortened or postponed due to funding constraints. (2:6)

IPR's were a major contributor to the success of the exercise.(28:S-I-1) I Corps, I Corps Artillery, 311th COSCOM, 142nd Signal Brigade, and numerous brigade sized units all held IPR sessions which brought together the principal participants in an open forum, free flow, discussion and problem solving atmosphere. The 311th COSCOM's IPR sessions did much to relieve the concerns over exercise logistical support.

The Exercise Directive: The exercise directive, an administrative guide which supplemented the exercise tactical operations order and was

distributed to all units, was written by the planning cell and the I Corps Artillery staff.(2:6) It detailed the objectives of the exercise, the command relationships and unit responsibilities, and general information on the conduct of the exercise. Annexes in the directive included: (1) Environmental restrictions and actions (per the EA); (2) Safety guidance and procedures for both ground and air units; and (3) Administrative guidance for emergency's, health and welfare, and administrative services. The exercise directive was briefed at all major IPR sessions from December 1987 to the start of the exercise. By using an exercise directive the planning cell was able to keep the Corps Operations Order tactically sound and un-cluttered by administrative matters — thus reducing training detractors.

Tactical Field Artillery planning: Until November 1987 the exercise planning cell was responsible for all exercise plans including FA operations.(2:8) This was necessary because of the large number of ongoing activities conducted by the I Corps Artillery part-time staff. The planning cell, guided by the Corps Artillery Commander, invited the FA units who were to participate, defined the FA safety and firing schemes, and in general coordinated all FA operations for the exercise. This left the Corps Artillery staff out of the planning cycle and, in order to train the I Corps Artillery staff, a hand-off of planning responsibilities for FA operations was done in November 1987 when a planning briefing and document was presented to the I Corps Artillery staff. Questions were answered as to intent, actions taken, and future requirements after which the planning cell became assistant planners, for the I Corps Artillery staff on FA matters. Items requiring I Corps

Artillery staffing included: FA Survey, FA meteorological support, FA firing positions, ammunition procedures, and the command and control of FA with the Corps. The I Corps Artillery operations officer became the chief tactical planner for FA units. (2:9)

Lessons Learned

Coordination for Exercise Real Estate:

Lesson learned: Obtaining permits to use BLM land is slow and complex.

Discussion: Initial contacts were made with the BLM in July 1986. The BLM was very cautious in their approach to the exercise and the land that it was to use because current federal legislation requires them to follow the guidelines established by the 1979 National Environmental Protection Act (NEPA).(10:3) NEPA requires an Environmental Assessment (EA) or Environmental Impact Statement (EIS) for military activity on BLM lands and FIREX gained access to BLM land only after the completion of a lengthy EA which was done by an independent contractor, Bio/West of Logan, UT at a cost $150,000 which included all aspects of the exercise's effect on the environment. The EA process took nearly eighteen months to complete and the final BLM permit was issued only two days prior to the exercise.(2:3)

Recommendation: If an exercise contemplates using BLM land, coordination must be maintained between agencies, deadlines honored, and commitments completed by both the Army and BLM in a timely manner.(2:3)

Obtaining Exercise Maps:

Lesson Learned: Many areas of the United States are not covered by DMA 1:50,000 scale series maps and special order maps are hard to obtain.(6:2)

Discussion: The planning cell discovered that eight 1:50,000 scale map sheets of DPG were no longer printed by DMA including the northern sector of the installation, which contained an entire live fire training area. In order to obtain the required 1:50,000 scale map coverage the following steps were taken by the planning cell. First, approval was obtained from FORSCOM, IAW FORSCOM Supplement 1 to AR 115-11, to have special maps printed. Then, coordination was made with the 30th Engineer Battalion (Topographical), Ft. Belvore, VA, to produce 2000 sets of the required maps in 1:50,000 scale using reproducible 1:24,000 scale master printing plates which were purchased from the United States Coast and Geodetic Survey, at a cost of $1895.(13:3) This action took nearly a year to accomplish and required visits to FORSCOM, and the 30th Engineer Battalion by members of the planning cell. The maps were delivered only two months prior to the exercise.

Recommendation: When planning an exercise insure, that map coverage is adequate and that printed maps are available. Do not assume that DMA will have the maps in the scale or quantity you desire. (6:3)

CEOI Preparation:

Lesson Learned: Because units do not know nor understand their communications requirements with higher, lower, and adjacent units, the formation of CEOI's is a slow process.(28:S-I-5)

Discussion: Many units participating in FIREX could not articulate their communications needs in terms of nets, members, or equipment, which caused long delays in the preparation of the CEOI by the NSA. One solution to the problem, which worked well for the FA and Aviation units, was to use unit CEOI information take from previous I Corps exercises. The solution did not work for the logistical units of the 311th COSCOM because there was no historical or doctrinal communications data available for logistical units. In order to provide radio nets to the logistical units, the number of radio nets associated with an infantry company was chosen as the basis for logistical unit requirements. In some cases this base approach worked; however, it was not adequate for the logistical units.

Recommendation: Major exercise commands must designate a qualified Communications and Electronics Staff officer to insure that radio communications requirements are made known to those preparing the exercise CEOI. (28:S-I-5)

Radio Frequency Coordination:

Lesson Learned: Because the radio frequency spectrum in the United States is very crowded, long lead times are required to obtain military frequencies.

Discussion: The exercise planning cell became involved with the 6th US Army frequency manager, the link between the military and the Federal Communications Commission (FCC) who controls the frequency spectrum, early in the planning cycle. Because the planning cell did not know the number and composition of nets required, it was very

difficult to obtain the nearly 300 frequencies required for FM communications, let alone the radar, aircraft and microwave telephone frequencies for specialized equipment.(28:S-I-5) A last minute attempt to solve the frequency problem was to obtain blocked frequencies which could not be used and assume all other frequencies to be usable. The assignment of unit net frequencies was done by NSA using their computer CEOI generation program.

Recommendation: Exercise planners must start early to obtain the frequencies needed for any large scale exercise. (28:S-I-5)

Conduct of Battle Book 87:

Lesson Learned: Participants in "battle book" exercises must also be participants in the actual exercise. (2:5)

Discussion: Battle Book 87 was designed for FIREX Commanders, S-3s, and S-4s of the major commands and brigade size units and it was critical that participants in Battle Book 87 were those who would be in these key leadership positions for the actual exercise. The battle book concept only works when: (1) Leadership personnel are stabilized and: (2) The experience is documented and distributed to the lowest elements of the command. In several cases, participants in Battle Book 87 failed to take notes, photos, or map information back to their subordinate units resulting in problems during the actual exercise. (2:5)

Recommendation: Battle book concepts must be articulated to participants and leaders participating in a battle book must be in directed leadership positions for the actual exercise.

Installation staffs:

Lesson Learned: The installation staffs learned as much Battle Book 87 as did the major commands. (2:6)

Discussion: The installation staffs had an opportunity to meet with the Battle Book 87 participants at a dinner meeting which gave them the opportunity to understand the needs of the exercise participants as well as express their concerns. The two-way, direct communication, was a key to success.

Recommendation: That pre-exercise Battle Book exercises include the staffs from the installations involved. (2:6)

Exercise Logistical units:

Lesson Learned: RC logistical units are in high demand to participate in exercises, and must be contacted early, convinced that the exercise is worthwhile, and then commit to participate.

Discussion: RC units are not normally ordered to participate in exercises during annual training but have an opportunity to select how and where their annual training will be conducted. RC units must plan two to three years in advance for annual training and the plans are articulated at yearly regional site date conferences. The site date conference for the 6th Army area was held in February 1987 in Reno, NV, to finalize RC unit training plans and locations for annual training in 1988. The 311th COSCOM and 6th US Army waited too long to nominate logistical units for FIREX, hence few logistical units committed to the participate in the exercise at the site date conference.(2:5)

Recommendation: Exercise major commands must be responsible to insure that their units agree to participate in an exercise prior to yearly site date conferences.

Role of higher headquarters:

Lesson Learned: The goals and objectives of an exercise must be agreed upon by the highest command level.

Discussion: FIREX was developed and directed by the I Corps Artillery planning cell but, because of the number and types of units involved. there was concern expressed by 6th Army and FORSCOM that FIREX should become an I Corps exercise. FIREX was not intended to be, nor did it develop into, an I Corps controlled exercise because early in the planning cycle, an agreement was reached between the I Corp and I Corps Artillery commanders defining the responsibility of each headquarters. Planning help was provided to the exercise planning cell by several I Corps staff sections including: (1) the Corps G-2 who provided a tactical scenario scripting cell; (2) the Corps G-4 who provided logistical planning support to the 311th COSCOM and; (3) the Corps G-3 who critiqued the initial draft of the OPLAN to insure it was tactically sound.

Recommendation: The higher headquarters staff needs specific duties defined and an exercise chain of command established. (2:8)

CHAPTER III

USE OF MILITARY INSTALLATIONS

Two Army Material Command (AMC) installations, Dugway Proving Ground and Tooele Army Depot and the Utah National Guard's Camp W. G. Williams were used for FIREX. Negotiations with the installations for the conduct of FIREX were begun when each installation was provided with an exercise land use proposal, which became a key planning document. (29:— ; 30:—) Exercise specifications, where applicable, were detailed in the land use proposals for:

Location of the railhead for equipment trains
Installation support requirements
Warehouse buildings
Security requirements
Additional construction required
FA live firing procedures
Airspace Management.
Conduct of live fire JAAT and Close Air Support Missions.
Headquarters, logistical, and communications locations.
Roads and training areas to be used.
Installation support requirements.
Environmental concerns.
De-confliction with other training and testing activities
Participation in Battle Book 87. (3:1)

Dugway Proving Ground (DPG):

DPG was used as the main battle area for 12 FA battalions firing into three separate impact areas, and Joint Air Attack Team Training (JAAT) with helicopters, FA, and USAF assets. In addition, logistical bases, the I Corps Tactical Operations Center (TOC) and communications sites would be located at DPG. (29:—)

The planning process with DPG was to present the plan, let the DPG review it, react to DPG's comments and revise if necessary, and then submit the revision to the DPT, DPG, for final approval. This process

allowed the staffs to work together and develop goals which satisfied the needs of both commands.

Tooele Army Depot (TAD):

TAD's missions include the rebuilding of Army equipment and the storage of large quantities of ammunition.(4:2) The depot is divided into two separated areas, Tooele North and 15 miles south, Tooele South. (4:1) Tooele South area was the exercise's main logistical facility and headquarters for the 311th COSCOM and included an area to off/on load rail cars, a marshalling area, warehousing facilities for supplies, and a communications center.(30:---)

The planning cell and the planners from 311th COSCOM submitted a detailed land use proposal in August 1987 to TAD's Director of Reserve Components (DRC) which was addressed and staffed over the next 10 months. The DRC at TAD, though a very small staff, involved the other directorates of the Depot in the planning. The exercise planning cell left most of the details to the 311th COSCOM because they would occupy the area but monitored and resolved problems between TAD and the 311th COSCOM as necessary.

Camp W. G. Williams:

The traditional UTARNG training site, Camp Williams offers one impact area suitable for Field Artillery fire. Camp Williams was used as the Corps rear battle area and had FA, logistical, communications, and military police units training in rear area battle techniques during FIREX. A detailed land use proposal briefing was given to the installation staff in March 87, staffed during the next 12 months, and approved by the Utah Adjutant General in April 1988.(2:3)

Lessons Learned

AMC installation staffing:

Lesson Learned: The DRC at TAD was overwhelmed by with the magnitude of the exercise. (4:3)

Discussion: The staff coordination for the use of TAD was primarily between the 311th COSCOM and TAD's DRC. The exercise planning cell provided limited support to work with the depot but there seemed to be no clear staff activity or direction at the depot. With only one officer in DRC office, the installation was not represented at 311th COSCOM IPRs because of manpower limitations.(14:2)

Recommendation: Individual Ready Reserve (IRR) filler staffing at AMC depots for exercises of this magnitude must be arranged. (4:3)

Specific Planning Guidance is required:

Lesson Learned: The more specific the planning cell can be in defining their needs to an installation the better.

Discussion: The three installations received specific land use proposals which detailed map references, locations, routes of movement, times, and numbers of people involved. The planning cell defined how they would like to be supported and gave the installation time to react.

Recommendation: Exercise planning cells need to develop a realistic set of exercise specifications for installations to evaluate.(3:3)

Exercise Command Headquarters:

Lesson Learned: An exercise command headquarters must be designated at each installation. (5:2)

Discussion: Failure to designate a command headquarters at each installation violates unity of command.(5:2) The senior headquarters at DPG was I Corps Artillery and at TAD the 311th COSCOM but, Camp Williams had only a small rear battle cell to act as a command element. In each case, the headquarters were not staffed to coordinate with the installations to answer administrative questions such as emergency leave, troop density, and the planned activities of units. This caused delays in information flow and forced the installations to coordinate directly with the units.

Recommendation: Establish an exercise command headquarters at each installation.(5:2)

CHAPTER IV

ENVIRONMENTAL PROTECTION ISSUES

Army Regulation (AR) 200-2 and NEPA (Public Law 91-190, 1970) requires that the military submit for public scrutiny environmental information on any change to existing land usage.(26:8) FIREX was a major change in troop density for the military installations involved and therefore required the printing of environmental information in the Federal Register. In addition, FIREX proposed to use land which was controlled by the Department of Interior and its agent, the BLM. The use of public land administered by the BLM required special information which included:

> A description of the proposed exercise
> The need for the proposed exercise
> Any exercise alternatives considered
> A description of the affected environment
> Environmental consequences of the exercise
> Measures taken to mitigate adverse effects to the environment.(10:i)

Environmental information requires extensive study and technical knowledge. Most installations have environmental documentation which will meet the requirements of AR 200-2 but, the magnitude of FIREX required basic environmental research. Even though the study was begun in July, 1986, it would take nearly two years to meet the statutory requirements described in the regulations.

The environmental assessment process:

Installations have staff members who are environmental experts, the UTARNG has an Environmental Engineer (assigned to the Director of Engineering and Housing) and both DPG and TAD have staff

environmentalists assigned; however, early in the planning cycle it was discovered that none of the available staff environmentalists had done a full study which would meet the requirements of AR 200-2.

The NGB has an environmental staff responsible for National Guard environmental actions who provided the exercise planning cell with a liaison officer to help initiate the environmental study. Meetings were held with DPG, TAD, Utah National Guard, and BLM personnel who agreed that an Environmental Assessment (EA) would meet the environmental requirements.

A third party contractor, agreeable to all concerned, was contracted to do the EA by the UTARNG at a cost of $150,000. Specifications for the contract included such detailed topics as soil, water, vegetation, wild life, and cultural effects. The contractor was directed by the BLM, in cooperation with the UTARNG, and the two installations. Work began on the EA in February 1987 when the exercise planning cell provided information on unit locations, density of troops and equipment, and the routes to be used. During the next 12 months, meetings were held to refine land needs, eliminate BLM land which could be adversely effected, and to look for useable alternatives until a draft EA was issued for public comment. (10:---)

The draft EA was well received by the Utah public but was questioned by staff members of the BLM and DPG because they were concerned with the specific measures to be taken to minimize or mitigate damage to the environment. The planning cell, the UTARNG, the EA contractor, and the concerned installations developed a series of measures to be followed to limit environmental damage which included

limits on road use, speed limits, aircraft altitude restrictions, fire prevention measures, and the requirement to spread water on roads if dust became a problem.(10:87)

Public meetings were held in several areas to explain the exercise, its mitigation measures, and the EA to those interested, including wild life federations, the media, and local residents. The public accepted the EA and did not file protests of the action despite some threats from one group.

The EA was approved by the Adjutant General UTARNG and the BLM in late April 1988 and the final 45 day waiting period as required by NEPA for public comment was begun. The BLM issued permits to use their land on 5 June 1988, two days prior to troops arriving for the exercise.(2:3)

Lessons Learned

Military and BLM working relations:

Lesson Learned: The military and BLM have not worked together to prepare environmental documentation primarily because the protection of the environment is a new aspect of military training. (11:2)

Discussion: Because this was the first time the BLM and the military had prepared a joint environmental assessment, the environmental documentation for FIREX was unique. Planning was delayed because each party did not understand the needs and goals of the other -- the BLM thought they were in charge, the contractor thought he was, and the installations and planning cell had no basis to judge. Finally the exercise planning cell began to direct the work of the contractor

and to coordinate with the BLM by using the UTARNG Environmental Engineer as the environmental point of contact.

Recommendation: If an EA is required then one person who understands the goals and requirements of all concerned must be designated as the director.

Informing soldiers about environmental requirements:

Lesson Learned: Soldiers must be informed about exercise environmental requirements. (10:90)

Discussion: Individuals and small units are the ones who must comply with environmental protection action directives because items such as trash removal, fire fighting, oil spills, timber cutting, and field sanitation happen and are monitored at the unit level. The challenge to the exercise planning cell was to articulate to the chain of command a list of environmental do's and don'ts which would reach small units and individuals. IPRs, individual unit briefings, letters, and the exercise directive were all used to hold the chain of command responsible for good environmental practices. Joint monitoring teams were established by the BLM and the military to insure that the units complied with the mitigation measures.(11:2)

Recommendation: Details of the environmental plan must be given to the lowest unit and both soldiers and leaders must understand that taking care of the environment is important.

CHAPTER V

EXERCISE FUNDING

The FIREX planners were no exception to the generalization that: "exercise planners do not understand funding issues." They did not understand training funding procedures for National Guard units, let alone US Army Reserve (USAR) or AC units. The planners assumed that since units have to train, money is available for training and the units would spend their training money for FIREX. If it were only that simple, how simple planning would be.

The first funding issue faced was the transportation of exercise equipment. Traditionally, National Guard or USAR units training outside their geographic areas borrow equipment from units in the training area. Since FIREX would involve nearly all of Utah's National Guard and USAR units and because there would be little, if any, equipment to loan, each participating unit was required to bring its own operating equipment to the exercise. The NGB allocated $800,000 for movement of National Guard equipment to and from TAD for the exercise while movement of AC and USAR equipment was to be funded by their major commands.(13:3)

The next issue was to determine who would be the funds manager for the exercise. The Utah National Guard's United States Fiscal and Property Office (USP&FO) - Logistical Division accepted the mission of arranging exercise funding which became a full time job for a staff of six from January 1987 to September 1988.(13:1)

The USP&FO Logistical Division coordinated funding for AC, USAR, and National Guard units participating in FIREX and they conducted a

series of funding IPRs with their counterparts in the states and major commands affected by FIREX. Major command fiscal planners developed the details of how the exercise was to be funded by the participating commands.

Three funding mechanisms were developed by the USP&FO for exercise participants. These were:(13:4-5)

1. Army Reserve and Active Army Participants: Payment between commands was done using Inter-Service Support Agreements, Department of the Army Form 2544 which is an agreement to pay for services rendered. DA Form 2544's were issued by the major command resource managers to the Utah USP&FO who bought the units fuel, unit level repair parts, and other supplies normally used during field training.

2. National Guard Units: The annual training budgets for these units were modified at the NGB level to reflect the units as a participant in FIREX and withdrawing unit training funds from the separate states and consolidated them in the Utah training account, thus simplifying the funding for fuel, repair parts, etc. for the Guard units.

3. Subsistence: All units were supported by the Troop Issue Subsistence Activity at Ft. Lewis, WA. which billed for subsistence directly to the FIREX units based upon the number of personnel in the exercise.

In addition to funding for food, fuel, parts, and subsistence there were ancillary items which were obtained by contracting from civilian sources to support the exercise. Ancillary items included

chemical toilets, cold storage trailers, ice, water trucks (for both potable water and road sprinkling) among others; the total bill for contract items was $413,246.(13:2) To finance this expense, each unit was charged a $2.40 per man, per day training fee for the exercise, which were accepted and funded by either DA 2544 or the National Guard budget.(13:6)

Installation support funding agreements were reached after lengthy conferences with the exercise planning cell, the installation's points of contact, and the USP&FO. The Utah USP&FO issued DA Form 2544's to DPG and TAD to fund civilian personnel overtime, range control manning. equipment rental, and billeting for exercise administrative support personnel at a cost of $185,000.(13:4)

Several exercise items were purchased by the USP&FO, on a reimbursable basis. These items included: Medical supplies and services — $200,000; major automotive repair assemblies not normally funded by the units (engines, transmissions, etc.) — $125,000. Agreements were reached with the depots supplying materials that if the items were not used they could be returned at no cost and only those which were consumed would be billed to the using unit on a DA 2544.(13:4)

The USP&FO was able to coordinated exercise funding but only through extensive work with resource managers at the major commands. I Corps, 5th and 6th US Army, and FORSCOM all provided resource management information to the USP&FO. Resource managers developed a system which worked, despite initial delays and lack of knowledge, to accomplish the exercise without fiscal constraints.

Lessons Learned

USP&FO Staffing:

Lesson Learned: The staff at the USP&FO was not adequate to accomplish the exercise funding tasks and keep up with their normal work load. (13:1)

Discussion: To augment the staff of the USP&FO a request for funding of an additional two people (a captain and an E-7) was sent to 6th US Army. Funding was apprcved, the individuals hired, but for only 179 days, which is the maximum allowable length for non-active duty soldiers.(13:1) The 179 days were too short to accomplish all the required USP&FO tasks.

Recommendation: When an exercise planning cell is formed adequate positions should be funded for the fiscal manager.(13:1)

Funding decisions:

Lesson Learned: While an exercise is in its initial planning phases a decision must be made on how it is to be funded.(13:3)

Discussion: The USP&FO was not contacted until six months after the start of serious FIREX planning. There must be early continuous and two way dialogue between the planning cell and the fiscal managers to insure that exercise funds are available.

Recommendation: Planning cells must include a dedicated funds manager from exercise inception to after exercise clean up. (13:3)

CHAPTER VI

LOGISTICAL PROCEDURES

The logistical procedures for large scale exercises must be carefully planned in order to provide the training units with the food, fuel, munitions, and services required to support training. (14:3)

Logistically, FIREX was a large size exercise with nearly 12,000 personnel, 2500 vehicles, and the expenditure of 10,000 rounds of field artillery ammunition. Projections for the exercise indicated that nearly 500,000 gallons of fuel and 250,000 meals would be needed, along with laundry and bath facilities, equipment repair, supply issue, and transportation services.(15:3)

The 311th Corps Support Command (COSCOM), a Los Angeles based USAR unit, was the logistical operator for the exercise. The 311th COSCOM, a major command of I Corps, had conducted logistical operations on numerous exercises, but FIREX was to be the first exercise where they would plan and execute all logistical operations in an essentially bare base environment. Because there were few logistical facilities available, FIREX would replicate real world situations of distance, dust, heat, and leadership experiences for the logistical community.(14:1) Plans were made to place the logistical units in field locations and to operate in a realistic wartime manner which would test the 311th COSCOM's standing operating procedures and tighten the logistical link with I Corps Artillery.

Planning coordination between the 311th COSCOM and the exercise planning cell began in May 1986 when agreements were reached regarding

troop listing procedures and the amount of tactical play for 311th COSCOM units. Because most logistical units belong to the USAR, the 311th COSCOM S-3 and the 6th US Army DPT (the 311th COSCOM's peace time headquarters) arranged for the needed logistical units their length of participation and rotation schedule. Persuading logistical units to participate in an exercise is difficult because they are in short supply and are continually being tasked to participate in exercises.(14:5) It took nearly 18 months to obtain the logistical units needed to support the exercise, and even then, there were shortfalls in veterinary, bath and laundry, and ordnance units during the exercise.(14:5) The logistical system worked around the shortfalls and, because the exercise was only 21 days long, the exercise did not suffer from the lack of these logistical units.(14:5) The 311th COSCOM established a chain of command which included two support groups, a Material Management Center (MMC), a Movement Control Center (MCC), an Ordnance Group, and a hospital, for a total logistical strength of nearly 7500 people and more than 50 units.

The next step in organizing the logistical process was to obtain forecasts for the commodities to be consumed by sending, through the MMC and MCC, questionnaires to each unit requesting exercise logistical and transportation information.(15:2)

It quickly became evident that local purchase contracts would be required to support the exercise and the Utah USP&FO — Logistical Division became the contract point for the exercise. The Logistical Division acted as a "host nation" to arrange for the local purchase of

items including fuel to be consumed, warehousing, chemical toilets, and other items required to support the exercise.(13:4)

The 311th COSCOM and its major subordinate commands participated in Battle Book 87 and selected the locations for their units including the hospital, three ammunition supply points, fuel storage areas, rail head, maintenance areas, and headquarters locations. The COSCOM also conducted a reconnaissance of the training areas to be used by the field artillery units to gain an understanding of how and where the tactical training would be conducted. During Battle Book 87, coordination between the COSCOM, the three installations, and the USP&FO was accomplished, to develop the logistical plan and disposition of units.

Battle Book 87 provided an opportunity for the 311th COSCOM to develop logistical construction requirements with Utah's 115th Engineer Group who would construct logistical sites during their yearly training. Coordination for construction took place between the 115th Engineers, 311th COSCOM representatives, the concerned installation's staff engineers, and the planning cell.(16:4) Construction, began in November 1987 and concluded with post-exercise clean up, included leveling and smoothing of areas for fuel bladders, a rail off-loading dock, digging of sumps for bath and laundry waste water, development of two field ammunition supply points, and the improvement of the road network near the hospital.

The 311th COSCOM refined their standing operating procedure (SOP) to insure that the issue and turn-in of supplies would go smoothly. They issued to the units a "How To" manual which covered the basics of

obtaining supplies during the exercise and briefed the manual with both logistical and customer units at IPRs held by the major commands.(14:5)

The 311th COSCOM held several IPRs for logistical planners where they developed the procedures to be used during FIREX. To insure logistical plans met customer needs, the planning cell and installations always had representation at 311th COSCOM IPRs, where areas of concern were resolved. Those attending the IPRs were empowered by their commanders to make decisions, thus speeding the planning process. To give customer units a chance to understand the how's and why's of logistics, the last two IPRs included representatives of all battalion or higher units participating in the exercise.(14:5)

Lessons Learned

Early identification of exercise logistical units:

Lesson Learned: Because there is a shortage of RC logistical units they must be identified and agree to participate in exercises early in the planning cycle.(14:5)

Discussion: Competition for logistical units to support exercises is very keen and logistical planners must identify needs and solicit units early in the exercise planning cycle. 311th COSCOM planners were still looking for transportation and maintenance units in March 1988 and only by careful planning prevented the shortfalls from causing serious exercise problems.

Recommendation: Begin identifying logistical units early and insure they are on the approved exercise troop list.(14:5)

Overlap of logistical units:

Lesson Learned: Long term exercises require overlapping time periods for logistical units. (14:2)

Discussion: The annual active duty training period for an RC units is normally only 14 days but, with exceptions, a unit can arrange for a 21 day period to support an exercise. Because FIREX was 17 days long for combat units, the logistical units had to be staggered to support the exercise. Some units came early and left in the middle of the exercise, while others came in the middle and left late. Logistical coverage for FIREX was from 1 June to 1 July while the actual exercise was from 12 to 22 June; hence, the overlapping of annual training periods was required for some logistical units. The 311th COSCOM had planned for overlapping but in the case of the ordnance battalion, there was a two day period where ammunition issues could not be made because units were not available.

Recommendation: Careful planning is required to insure that logistical unit overlapping is accomplished.(14:2)

Ammunition handling problems:

Lesson Learned: Ordnance units do not often handle, in a field environment, the volume of ammunition consumed in FIREX. (14:2)

Discussion: Although the FIREX Ordnance Group had trained at an ammunition depot they had not trained in a field environment nor had they established field ammunition supply points (ASP). In addition, there was confusion over peace-time vs. war-time requirements for the arrangement of ammunition stored within the field ASPs. Problems in

ammunition handling and storage procedures were solved by the Ordnance Battalion and DPG Explosive Ordnance Demolition personnel. Major improvements were made in managing ammunition by coordination meetings between 311th COSCOM, the MCC, the Corps and Corps Artillery logistics officer. (28:S-III-1)

Recommendation: Procedures detailing how ammunition storage will be managed must be devised to insure that field ASPs are safe yet meet the needs of the exercise.(28:S-III-1)

Logistical unit communications:

Lesson Learned: The 311th COSCOM did not have adequate communications assets for the exercise.(14:1-2)

Discussion: Because logistical facilities were located in the field, the 311th COSCOM had to rely on military telephones to communicate over the extended distances of FIREX. The 311th COSCOM did not have a signal officer assigned for the exercise and their coordination with the supporting Signal Brigade was not complete because more telephone circuits were needed than anyone had anticipated. (14:2) To help solve the problem, leased commercial phones and radios were used to augment the military equipment used by the 311th COSCOM.

Recommendation: Logistical units must establish their communications needs, insure that they are authorized communications equipment and personnel by Table of Organization and Equipment (TOE), and
make communications training a training task in every major exercise. (14:1-2)

Combat Service equipment is old:

Lesson Learned: Logistical equipment such as bakery, laundry, and renovation equipment is prone to breakage due to advanced age and lack of spare parts. (14:3)

Discussion: Low density items from logistical units became inoperable during the exercise and could not be repaired because parts were not available. Planners need to know that in the case of low density logistical equipment the capability of units to perform their mission will probability be restricted by inoperable equipment.

Recommendation: Logistical units need to train with their equipment; however, they need to suggest ways to improve or replace their aging equipment. (14:3)

Logistical unit training concepts:

Lesson Learned: Logistical units are normally employed as separate companies and seldom train with battalions, support groups, or with a COSCOM.(14:5)

Discussion: Because several logistical units entered the FIREX planning cycle late, they had little understanding of their mission or the conditions they would face. Several worked their own agendas or were never given a mission by the next higher headquarters. The intermediate level commands, support groups and battalions, needed to monitor their units to insure that they followed the guidance and policies of the 311th COSCOM and the exercise director. To correct the identified deficiencies, the 311th COSCOM is now conducting tactical and

chain of command training for the units in their war time organizational structure.

Recommendation: The logistical commanders intent must be communicated to the company level and logistical units must train as a command. (14:5)

CHAPTER VII

MEDICAL SUPPORT

Because of its size, FIREX required dedicated medical support which was provided by the 144th Evacuation Hospital (144th EVAC), UTARNG, who planned and executed health care and medical command and control. The 144th EVAC began planning for the medical support requirements in July 1986 and published six issues of a preventive medicine letter which kept exercise units informed of medical issues.(17:1)

The 144th EVAC established their main location, a hot and dusty field location at DPG on 6 June 1988, with the majority of training troops, and provided clinic medical services to TAD and Camp Williams. (17:4) Equipment maintenance, personnel comforts, and most importantly a clean medical environment were issues the hospital faced and overcame while training and providing medical care in a "real world" situation. (17:2) The 144th EVAC also arranged for backup medical support from the Veterans Administration hospital in Salt Lake City and the control of six UH-1 helicopters which were used for medical air evacuation.

Lessons Learned

Field sanitation training:

Lesson Learned: Units have neglected to train field sanitation teams. (17:5)

Discussion: Units operating in FIREX were totally dependent on their ability to survive in a field environment. Because no barracks or fixed facilities were used. field showers, latrines, garbage collection, and the prevention of heat injuries were all small unit responsibilities. 144th EVAC preventive medical teams discovered some units had not transported garbage, dug field latrines, nor properly cleaned kitchen areas — problems which could have been corrected by field sanitation training and small unit leadership.

Recommendation: Units participating in a field training exercise must establish medical SOPs and be trained in field sanitation and preventive medicine techniques. (17:6)

Medical information:

Lesson Learned: Medical related issues should be briefed to participating units at every IPR by the servicing medical unit.(17:1)

Discussion: Many units did not know what their organic medical capability was or had forgotten to include medical services in unit training plans. There were units who had not brought their medics or medical supplies to the exercise because, in past training, units had relied on installation dispensaries for medical support and did not understand FIREX medical support channels. The dispensary at DPG was constantly being asked by units for medical services although the 144th EVAC was less than one mile away.

Recommendation: Medical training and information must be included in all exercise plans. (17:1)

Medical communications:

Lesson Learned: The military communications equipment authorized by TOE for an Evacuation hospital is not adequate. (17:2)

Discussion: No FM radios were authorized the 144th EVAC but were required to control evacuation aircraft, monitor range control nets, and coordinate medical requirements. The 144th EVAC needed access to the common user telephone system provided by the signal brigade but the communications equipment to enter the telephone system was either nonexistent or did not work. A leased line for commercial telephone service did provide some relief but was not adequate for patient care and hospital administrative needs.(17:3)

Recommendation: Medical communications requirements must be planned in detail and communications equipment and personnel obtained by TOE for an evacuation hospital.(17:3)

CHAPTER VIII

EXERCISE COMMUNICATIONS

FIREX relied on tactical radio nets (both FM and SSB/RTT), military telephone circuits (microwave and hardwired), leased commercial telephones, and ground courier service for communications.

The telephone system:

An area signal battalion was required to provide telephone service and it installed and operated four relay locations and eight customer nodes. Locations of the relays and nodes were coordinated during Battle Book 87 and were briefed to the unit commanders involved. Telephone system engineering, to insure electronic interface between sites, was done by the 142nd Signal Brigade and the signal sites were not required to move to facilitate electronic maintenance and the installation of customer circuits.(18:1) This lack of movement of signal sites significantly detracted from the "war-time" training received by the signal battalion.

The exercise telephone directory was prepared by the 142nd Signal Brigade based on limited input received from the participating units. Because units did not know their switchboard identifications, and because the identifications were not displayed in the exercise CEOI, errors and delays in producing the directory were encountered. (18:1)

Telephone circuits to be used during the exercise were identified by the units and the I Corps Field SOP. These proved, in most cases to be adequate, but a shortfall of circuits for the logistical units, as has been previously discussed, was quickly discovered during the exercise. There was little institutional knowledge concerning

communications support for logistical units and the logistical themselves units did not adequately articulate their signal requirements. (18:3)

The telephone system was manual and required operators at the major nodes and at unit switch boards. Automated switching equipment has not been issued by TOE to the 142nd Signal Brigade. which caused interface problems with the AC units participating in FIREX who had been issued automated equipment. The 142nd Signal Brigade and the AC units learned how interface new and old equipment in a manual mode but there was initial confusion.

Signal training:

The FIREX communications system was designed to support the exercise but there were problems in the signal training philosophy. Communicators have been criticized in past exercises for not having flawless communications at the beginning of an exercise; hence, communicators train to establish the perfect system early, check it out in detail, and never change a thing once it is working. Communicators would have the system in place and working weeks prior to an exercise thus insuring that communications would be working and that there would be no criticism of the system. (18:1)

In war time, the communicator may not be able to establish his system prior to hostilities, and units may have to depend on internal communications for long periods prior the establishment of a fixed telephone system. The divergence of philosophy between perfect communications and tactical reality must be resolved by the exercise planners. Realistic training would favor the rapid development of the

communications system as the exercise develops. Planners and leaders are given a false sense of capability by allowing communications to be established prior to an exercise.(31:295)

Lesson Learned

Telephone circuits:

Lesson Learned: Units did not know the telephone circuits they required. (18:1)

Discussion: Most FTXs are conducted at the battalion or lower level, where internal telephone communications are easily established. The telephone communications requirements for large scale exercises are much more complex and the signal telephone doctrine, although developed, had not been practiced by FIREX units. Assets were available but, the participants did not understand the critical nature of telephone communications over extended distances, hence they did not take the time to identify requirements. In many cases, doctrine and the I Corps SOP were not followed in the development of the telephone requirements and the planning staffs did not correct the problems until the exercise had started. (18:2)

Recommendation: Commands need to review their telephone circuit requirements and practice external communications during unit FTXs.

CHAPTER IX

VISITORS BUREAU

Because FIREX was the largest reserve component exercise conducted in many years, numerous Very Important Persons (VIP) were invited to attend. The rank of the visitors, both military and civilian, required that a visitors bureau be established to reflect the professional efforts of the exercise and, for this reason, the Utah Adjutant General volunteered his staff to assist with the visitors bureau.

The visitors bureau, staffed by members of the UTARNG DPT, coordinated the visits of 500 invited guests by arranging accommodations and transportation, briefing exercise concepts, and escorting the VIPs throughout the exercise area. (20:2)

The visitors bureau conducted VIP briefings in facilities at DPG and Camp Williams which were equipped with excellent briefing rooms, rest facilities, and communications areas for the VIPs and then escorted the VIPs to field locations to visit selected units.

Lesson Learned

Visitors bureaus must be flexible:

Lesson Learned: Very important people change their itineraries very quickly and go where and when they want. (20:1)

Discussion: The visitors bureau can only facilitate the stay of the VIPs and it must be flexible in planning by establishing alternatives for time, location, and briefing officers. The bureau can not become tied to a time line which cannot be controlled.

Recommendation: The most flexible yet knowledgeable personnel must be assigned to the visitors bureau operation. (20:2)

CHAPTER X

THE UNITED STATES AIR FORCE

FIREX was an ad hoc joint exercise; i.e., without Joint Chiefs of Staff funding yet, the support of the USAF's Tactical Air Command was needed to meet the exercise's tactical objectives of live fire JAAT, close air support (CAS), and battle field air interdiction (BAI). (21:2)

The exercise planning cell contacted the I Corps Air Liaison Officer (ALO) for help in involving the USAF in FIREX. He selected the 110th Air Support Operations Center (ASOC), Michigan Air National Guard, to fill the role of providing CAS, BAI, and Tactical Reconnaissance (TR) coordination for FIREX.(21:3)

The 12th Air Force Director of Operations (DO) was briefed by the planning cell and the ALO on the exercise concept, requirements, chain of command, timing, and aircraft requirements. The DO approved Air Force involvement in FIREX and designated the ALO as the "Air Component Commander" (ACC) for the exercise who then preformed the following tasks:

— Arranged for the USAF units and aircraft to fly the missions required;

— Developed and published the air space management procedures for the exercise;

— Prepared the daily Air Tasking Order (ATO) and Air Control Order (ACO) for the exercise;

— Coordinated procedures for the employment of live fire FA and aircraft during JAATs ; and

— Advised the exercise director on the employment of USAF assets.

Two hundred sixty fighter/bomber sorties were flown from 14 to 22 June as part of the exercise. Aircraft included F16, A10, F111, and OV10's using live fire cannon, 500lb and 2000lb bombs. Tactical air control parties and forward air controllers were located at the two DPG observation posts and conducted extensive training for CAS, SEAD, and JAAT with the FA observers.(21:5) Live field artillery and aircraft in the same area was coordinated as a matter of routine.

Lesson Learned

Airspace management is important:

Lesson Learned: The Corps airspace management system had never been tested in a live fire, aircraft intensive environment. (21:8)

Discussion: FIREX was the first exercise where the I Corps G-3 Air had to manage real airspace IAW the I Corps SOP. In this exercise there were real altitude restrictions, minimum risk routes, and aircraft crash procedures which required coordination between the Air Force, Army Aviation, and the Field Artillery.

Recommendations: Airspace management techniques need to be an objective of CPX and FTX training.(21:8)

CHAPTER XI

SPECIAL ACTIVITIES

Any exercise will have activities which may seem trivial and often these activities are planned only as after thoughts or when embarrassing questions have arisen after an incident. Plans often overlooked are safety (both ground and air), public affairs, and environmental compliance monitoring.

Safety Program: One of the highlights of FIREX was that no one was killed or seriously injured. With 12,000 people and 2500 vehicles involved in the exercise, it had been predicted that someone would be killed. The I Corps Artillery Commander was the exercise safety officer and he designated his Command Sergeant Major as the principal staff NCO dealing with safety measures for the individual.

A Command Sergeants Major conference, attended by most of the 100 sergeant majors in the exercise, to discuss individual safety and involve the Noncommissioned Officer support system in accident prevention was held in March 88.(28:S-IV-1) Subjects covered were: heat injuries, sleep deprivation, field sanitation, convoy operations, dust related problems, insect bites, and the possibility of snake bite.

The installations and the UTARNG provided safety personnel to monitor the exercise 24 hours per day who were empowered, by the exercise safety officer, to make on the spot corrections for safety violations. Signs and static displays were installed by safety personnel to remind soldiers that safety was important. (22:3)

Aviation safety was the responsibility of the aviation units and the Corps G-3 Air who maintained close coordination with the DPG

airspace manager. Procedures manuals were developed for Army aviators which detailed the area of operation, crash search grids, wire hazards, and exercise flight regulations. Because the area was within military restricted airspace there was no requirement to coordinate with the Federal Aviation Administration (FAA) but, as a courtesy, the FAA was kept informed of exercise plans.

DPG has excellent FA firing and impact areas and it was planned that at least twelve FA battalions would fire into the impact areas at the same time during FIREX. FA units were allowed to select their own firing positions, consistent with environmental and tactical requirements, and commence firing with minimal external control -- a radical change from past procedures.(29:35) There was adequate command and control to allow the chain of command to control FA firing but the airspace was crowded with helicopters, USAF fighter bombers, and other users. Because DPG range control could talk directly to the FAA and non-exercise aircraft in the area, they acted as the exercise clearing agency for airspace. Constantly in contact with I Corps Artillery operations, DPG range control could stop FA firing within one minute, which was considered adequate to protect the airspace. (3:12)

FA firing safety was done using chain of command safety procedures as specified in AR 385-63 which required commanders to certify that their units could safely fire resulting in no firing incidents during FIREX.

Public Affairs: Keeping the public and the soldier informed must be a command responsibility.(24:1) From its inception, FIREX was

designed as an unclassified, public access exercise designed to elicit public support for the military.

Public affairs actions were important for two reasons: the need to provide an EA for the exercise to the BLM and to the military installations, and; maintaining the pro-military attitude of the Utah public. The 128th Public Affairs Detachment and the UTARNG information officer used FIREX for two purposes, unit training and an opportunity to inform the public of the exercise. Articles appeared in the local papers at regular intervals concerning FIREX during 1987-88 and during FIREX itself the 128th PAD published a daily exercise newspaper, prepared media press kits, conducted a media day, and obtained extensive local radio and TV coverage. (23:3)

Public awareness meetings were conducted at several locations, in conjunction with the EA, to discuss exercise concepts and local community impact. These meetings, covered by the media to expand community awareness, were orderly and there seemed to be no anger directed towards FIREX by those attending. (24:4)

The Governor of Utah was briefed by the exercise director, BG Miller, in September 1987, to alert the state government to the exercise and this briefing resulted in the Departments of Transportation and Safety cooperating with the exercise planning cell.

Monitoring Teams Established: FIREX was required to monitor the participating units to insure environmental compliance. An environmental compliance plan was prepared which established teams using the Utah State Environmental Engineer, BLM personal, and installation

environmental staffs to monitor the units. Items checked included trash disposal, fire prevention measures, and disposal of POL and toxic waste, especially at the critical areas of the fixed and semi-fixed logistical locations of the 311th COSCOM.(10:Annex A)

Active Army Evaluator Plan: Each RC unit, battalion or larger, undergoing annual training is given a formal evaluation by a three man evaluation team from the active army. The evaluation plan, requiring nearly 300 evaluators, was written by 6th US Army and was supported at DPG, TAD, and Camp Williams. Evaluators rented civilian vehicles and stayed in local motels because quarters were not available at the installations.(28:S-IV-3)

Lessons Learned

Safety plans work:

Lesson Learned: A properly planned safety program can be an effective deterrent to accidents. (22:1)

Discussion: Briefings, written instructions and procedures, and a monitoring system all contributed to a very safe exercise; additionally, responsibility for individual welfare, unit safety briefings, range firing, and aviation safety procedures were all fixed within the chain of command.

Recommendation: The military has safety personnel who can develop a detailed safety plan for exercises but, the ultimate responsibility for safety rests with the individual and his chain of command.

Public meetings:

Lesson Learned: Public meetings helped present the exercise in a positive light.(24:6)

Discussion: Public meetings need to be controlled by the presenter and cannot be allowed to become a shouting match for those who don't support the exercise. Meeting presenters must listen to the remarks made, evaluate them, and if necessary admit that the public may have a better idea. Due to the openness of the military, the public remained friendly to the exercise despite dust, hot weather, and noise from convoys.

Recommendation: Conduct required public meetings in a professional manner which responds to the needs of the public.(24:6)

CHAPTER XII

CONCLUSIONS

The planning of a large scale FTX is complex. Exercised concepts and objectives must be articulated throughout the command, coordination made for facilities, details arranged for administrative support, and the exercise execution must be monitored to see if it is following the plans developed.

Planning requires the cooperation and support of the staffs of the major commands involved in the exercise and close and continuous coordination is required throughout. One command must be in charge --- it must set the tone and direction for the exercise. A large scale exercise, like wartime operations, can have many separate objectives and activities but they must be coordinated by the exercise director's staff.

The most important lesson learned in FIREX was that early coordination is required between major commands and without which, this exercise would have failed.(28:2) The unit staffs involved in FIREX had not worked together as planners but, by working together, developing a plan, and then executing the plan, received significant training. The units and individuals involved in FIREX planning could plan and execute another exercise in less than half the time FIREX required because lessons learned are still fresh in institutional and individual memories. A team has been developed which has increased readiness capability. (5:-)

Training exercises the size of FIREX are expensive in dollars and time but the results increase the combat readiness and warfighting capability of the participants. Military units must be trained and ready in peacetime to deter war, to fight and control wars that do start, and to terminate wars on terms favorable to the United States and allied interests. (1:1) The procedures developed for planning and the lessons learned from FIREX will contribute to the betterment of military training at all levels.

The questions provided at Annex A can be used by other large scale exercise planners to aid their planning and may well stimulate the thoughts of trainers at all levels.

ANNEX A

Questions for Exercise Planners

This annex is designed to assist exercise planners in developing a training exercise environment which is free of distractions. It is not designed to teach the tactics to be trained; however, it is designed to provide a framework for exercise planning. Questions have been taken from the experiences of I Corps Artillery, UTARNG, during the planning phase of FTX FIREX. Because exercises differ in scope and objectives, no attempt has been made to answer the questions but an exercise planner who can answer these questions will have a better understanding of what is needed for a successful exercise. The annex is applicable for large scale exercises. but may be used by planners at the battalion and brigade level.

Functional Areas

The annex has been divided into functional areas for simplicity; however, staff coordination between functional areas is required to insure exercise success.

The Exercise Director: The exercise director should review these basic items to determine the scope and objectives of the exercise. The answers to these questions become the director's exercise intent. Questions to be resolved by the exercise director include:

What is the scope of the exercise?

What are objectives of the exercise?

Will a special exercise staff be required?

What is the philosophy of the exercise towards the public. VIPs, and the media?

Is the exercise to be live fire?

Is the exercise to be Joint (Army, Navy, Air Force, USMC)?

What type of units will participate?

What is the exercise chain of command?

What is the general tactical scheme of the exercise?

What is the general time frame of the exercise?

Does the exercise involve both RC and AC Units?

The Exercise Planning Cell: The daily planning for the exercise will probably be done by a planning cell, which may be the command's normal staff. The cell needs to understand their function and the exercise director's intent in order to properly plan the exercise.

Questions to be resolved by the planning cell include:

What is the exercise chain of command?

What are the general functions of the exercise planning cell?

What is the planning cell's composition?

What activities will be accomplished by other planers?

If an exercise directive is required, who will write it?

What military facilities will be used?

Who specifies how military installations will be used?

Who coordinates with installation staffs and for what?

Will non-military facilities be used?

How many units will participate and what will be their missions?

How will invitations to participating units be done?

Who will write the operations order?

Who will write the OPFOR situation?

Obtaining Exercise Units: Staff coordination between the major commands is required to arrange for exercise units, because RC annual training plans are developed on a five year cycle. Many units will desire to participate in the exercise but, their higher headquarters may not allow them. The process of obtaining units culminates in site date conferences for each army area which confirm where and when RC units will attend annual training.

Questions to be resolved by the planning cell include:

Are RC units involved?

Do units come from more than one Army area?

When and where are the site date conferences for the RC units?

Who is the major peace-time command(s) for invited RC unit(s)?

Does the major peace-time command(s) approve of the exercise?

Does the numbered Army Headquarters DPT approve of the exercises?

Are National Guard units from more than one state involved?

Have the State Adjutant Generals concurred with the exercise?

Arranging to use military installations: This process needs to be done at least two years prior to the exercise because installations also make their commitments for supporting exercises at the site date conferences. Questions to be resolved by the planning cell include:

Does the installation G-3 or DPT support the exercise concept?

Will an installation representative attend the site date conference?

Who, at the installation, is responsible for:

Safety and environmental coordination?

Air space management and range control?

Radio frequency de-confliction?

Who is the principal point of contact for the installation?

Arranging for the use of non-Military Land: Not all exercises will require non-military land usage. Questions to be resolved by the planning cell if non-military land is required include:

Who is the legal council for the exercise planning cell?

What type of land is required?

Is the proposed non-military land public or private?

Are there existing agreements for non-military land?

How will the rental of non-military land be funded?

Who will contract for the land?

Who will fund the required environmental studies?

Who will write the required environmental documentation?

Arranging for exercise maps: Maps will be required for a field exercise and normally they can be obtained through the Defense Mapping Agency system.

Questions to be resolved by the planning cell include:

Are military maps available in the scale required?

Are there enough maps available without special printing?

Can maps be ordered through the Defense Mapping Agency?

Who will fund the maps required for the exercise?

If military maps are not available, then contact the FORSCOM G-3 at Ft. McPhearson, GA for assistance. The exercise planners may have to contact the United States Coast and Geodetic Survey to purchase printing plates of map masters, and in turn, have a special printing done by an army engineer battalion (topographical). This is a long procedure which will take a year or more to finish and requires intensive management.

Exercise Funding: Funding issues need to be resolved quickly and by a separate planning agency working with the exercise director's planning cell. Funding decisions should be made prior to inviting units and the invitations should include funding information. Funding should be discussed at every IPR.

Questions to be resolved by resource planners include:

Which headquarters will fund the exercise?

Who is the funding Point of Contact?

How will the following be funded?

RC planning cell pay and allowances.

Planning cell TDY for IPRs and coordination sessions.

Movement of unit equipment to and from the exercise.

Petroleum, oil, and lubricants (POL), repair parts, and subsistence.

Contracts for the local purchase of exercise items.

Medical supplies and services need.

Environmental studies which may be required.

Construction materials which may be required.

Funding for joint service needs.

Logistical Operations: Normally, there will be a logistical headquarters (a Support Battalion, Division Support Command (DISCOM), or COSCOM) which will develop the plans and procedures for logistical support based on the needs of the planning cell and participating units. Questions to be resolved by the logistical planning cell include:

Who is the logistical command for the exercise?

Who is the point of contact for logistical matters?

What IPRs will the logistical command conduct and who is invited?

Who invites the logistical units to participate in the exercise?

What is the logistical chain of command?

Who is responsible for the exercise logistical plan?

Who requests, monitors, and consolidates forecasts of unit needs?

Will an MMC and an MCC be required?

Who is responsible for ammunition plans and services?

Will logistical units participate in exercise tactical play?

What facilities will the logistical units require?

Will logistical units use fixed facilities or field locations?

Is there a railhead, POL pipe line, bakery, cold storage warehouse, large warehouse, and marshalling area available to the logistical units?

What logistical facilities must be built for the exercise?

Is the water supply adequate for the exercise?

Will additional drinking water be required?

Are there adequate transportation assets planned?

If the exercise relies heavily on RC logistical units, is there an overlap period between unit training periods to insure adequate logistical support?

Does the logistical headquarters have a communications plan which will work and has it been coordinated with the signal unit?

Medical Support: Most installations will have medical facilities adequate to support a battalion or brigade sized exercise. When planning a large scale exercise, or an exercise in an area where medical support is not available, a supporting medical unit will be required. Questions to resolve by the medical planners include:

Who will provide the medical support?

Will the medical unit provide medical, dental, and sanitation services?

Will the medical unit participate in exercise tactical play?

Who provides the funds for medical supplies and services?

Will the exercise length require multiple medical units?

How will medical information be disseminated to the participants?

What communications assets are required by the medical unit?

Who will control ground or air ambulance assets?

What coordination for backup medical services has been made?

What medical supplies and services must the participants provide?

Exercise Communications: FTX training requires extensive tactical radio communications including coordination for CEOI's. The planning cell

Communications and Electronics Staff Officer should plan communications requirements.

Questions to be resolved by communications planners include:

Radio Communications:

What doctrinal unit radio nets are required?

What frequency ranges will be used?

Are there special non-tactical nets required?

What stations operate in the nets?

Who will coordinated for the frequencies required?

Who will coordinate for the preparation of the CEOI?

Will communications security material be required?

Will the CEOI be classified?

What is the CEOI distribution plan?

The preparation of a CEOI requires long lead times and the cooperation of participating units who must know their radio communications needs. Radios are not the primary means of communications for logistical units, and those units may require extensive help to define their needs.

Telephone Communications:

Will military microwave telephone service be required?

What type of equipment will be operated in the telephone system?

What, if any, are the equipment compatibility problems.

Who is the point of contact for telephone system design?

What relay and node locations are required?

Who arranges for land use for the communications relays and nodes?

Will the communications locations conflict with live firing?

Who is responsible for the exercise phone book?

Visitors Bureaus: Plans should be developed for VIP visits. Questions to be resolved by visitors bureau planners include:

How many VIPs are anticipated?

Will a separate planning cell coordinate VIP visits?

Where will VIPs stay during their visits?

How will VIPs be transported to the exercise location?

Who will escort VIPs throughout the exercise area?

Who will provide the exercise briefings to the VIPs?

How will the visitors bureau be kept informed of exercise activities?

Joint Services: Joint training can be done in any size exercise. The Corps or Division G-3 normally arranges for joint service participation through the service liaison officers assigned to division and larger headquarters.

Questions to be resolved by the planning cell include:

Who plans the support required from the other services?

Who is the sister service point of contact?

Who will fund their participation?

What training benefits do they receive?

What requirements does the other service have for:

Communications, ammunition, POL, living arrangements, and operational control?

Special Activities: These are activities and questions which should be considered but may not be required by every exercise.

Military Police: Most exercises can be supported by the installations' military police force but a large scale exercise may require dedicated military police support.

Will a special Military Police unit be required?

Are traffic control points required?

Who will coordinated the activities of the military police?

Will the Military Police participate in tactical training?

Safety Program: Army Regulation 385-10, The Army Safety Program, require safety plans for all FTXs. The planning cell must conduct a risk assessment for the exercise and appropriate plans prepared to minimize accidents.

Who is the exercise safety officer?

Who will plan the safety efforts?

How will the NCO support chain support the safety plan?

How will accidents be reported to the media?

If the exercise is live fire, what firing range regulations will be used?

Public Affairs: Most large scale exercises will have some contact with the media and a public affairs plan will be required.

Who will be the point of contact for public affairs?

Is public good will an exercise objective?

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GLOSSARY

AC	Active Component
ACC	Air Component Commander
ACO	Air control order
ALO	Air liaison officer
AMC	Army Material Command
ANG	Air National Guard
AR	Army Regulation
ARNG	Army National Guard
ASOC	Air Support Operations Center
ATO	Air tasking order
BAI	Battlefield air introdiction
BLM	Bureau of Land Management
CAS	Close air support
CEOI	Communications and electronics operating instructions
CINCFORSCOM	Commander in Chief United States Forces Command
COSCOM	Support Command (Corps)
CPX	Command post exercise
CSS	Combat service support
DMA	Defense Mapping Agency
DO	Director of Operations - Air Force Operations Staff Officer
DPG	Dugway Proving Ground
DPT	Director of Plans and Training - A non-tactical operations officer normally at an installation.
EA	Environmental assessment

EIS	Environmental impact statement
EVAC	Evacuation hospital
FA	Field Artillery
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FM	Frequency modulation radio technology
FORSCOM	United States Forces Command - A Joint Chiefs of Staff Specified Command.
FSE	Fire Support Element
FTTD	Full time training duty
FTX	Field training exercise
G-3 AIR	Army Operations Staff Officer -- Responsible for air space management and fighter bomber coordination.
G-3/S-3	Army Operations Staff Officer
G4/S-4	Army Logistical Staff Officer
IPR	In Progress Review
JAAT	Joint Air Attack Team
MCC	Movement Control Center
MEDEVAC	Medical evacuation - Can be by air or ground means
MHZ	Megahertz - One million hertz or cycles per second (A measure of radio frequency)
MMC	Material Management Center
MP	Military Police
NEPA	National Environmental Protection Act
NGB	National Guard Bureau
NSA	National Security Agency

RC	Reserve Component
RTT	Radio Teletype Technology
SEAD	Suppression of enemy air defense
SOP	Standing operations procedures
SSB	Single sideband radio technology
TAD	Tooele Army Depot
TCP	Traffic control point
TDY	Temporary duty
TECOM	United States Army Test and Evaluation Command
TOC	Tactical Operations Center
TR	Tactical Reconnaissance
UDOT	Utah Department of Transportation
UHF	Ultra high radio frequencies (Above 220 Mhz)
USAF	United States Air Force
USAR	United States Army Reserve
USP&FO	United States Property and Fiscal Office
UTTR	Utah Test and Training Range - USAF range complex in Utah
VHF	Very high radio frequencies (Above 100 Mhz and less than 220 Mhz)
VIP	Very Important Person